

AMENDMENTS TO THE CLAIMS

1.-10. (CANCELLED)

11. (Currently Amended) The A computer storage apparatus of claim 10, further comprising: means for receiving change data from a source, the change data received in a mirroring unit; and
means for storing a changed logical block number in a buffer in the mirroring unit, the changed logical block number indicating a logical block on the source corresponding to the change data, the means for storing the changed logical block number including a data structure including block checksums corresponding to the change data; and
means for transmitting the block checksums across a journey link to a mirroring unit rather than transmitting change data across the journey link during a resynchronization of the mirroring unit and the computer storage apparatus.

12.-28. (CANCELLED)

29. (Previously Presented) A method for data mirroring, comprising:
receiving change data;
reading a block of data from a mirror, wherein a first logical block number corresponding to a first logical block on the mirror storing the block of data is already a part of an existing entry in a queue;
writing the block of data to a second logical block on a temporary storage;
changing the existing entry in the queue to reference a second logical block number corresponding to the second logical block on the temporary storage;
writing the change data to the first logical block on the mirror; and
adding a new entry to the queue, the new entry including the first logical block number.

30. (Currently Amended) A computer storage apparatus ~~medium~~ comprising:
means for receiving change data;

means for reading a block of data from a mirror, wherein a first logical block number corresponding to a first logical block on the mirror storing the block of data is already a part of an existing entry in a queue;

means for writing the block of data to a second logical block on a temporary storage;

means for changing the existing entry in the queue to reference a second logical block number corresponding to the second logical block on the temporary storage;

means for writing the change data to the first logical block on the mirror; and

means for adding a new entry to the queue, the new entry including the first logical block number.

31.-46. (CANCELLED)

47. (Currently Amended) ~~The A method for data mirroring of claim 4, further comprising:~~

receiving change data from a source, the change data received in a mirroring unit;

storing a changed logical block number in a buffer in the mirroring unit, the changed logical block number indicating a logical block on the source corresponding to the change data;
and

storing change data in the buffer if a remaining storage in the buffer is greater than a threshold;

wherein storing the changed logical block number in the buffer further comprises storing the changed logical block number in the buffer instead of the change data if the remaining storage in the buffer is less than the threshold.

48. (Currently Amended) The method of claim 47 [[4]], wherein receiving the change data from the source further comprises receiving the change data from a local mirror, the local mirror including a mirror of a storage volume of a host.

49. (Currently Amended) The method of claim 47 [[4]], wherein receiving the change data from the source further comprises receiving the change data from a host, the change data corresponding to a data change on a storage volume of the host.

50. (Currently Amended) ~~The A method for data mirroring of claim 4, comprising: receiving change data from a source, the change data received in a mirroring unit; and storing a changed logical block number in a buffer in the mirroring unit, the changed logical block number indicating a logical block on the source corresponding to the change data;~~ wherein:

receiving the change data further comprises receiving the change data corresponding to a change in a block referenced by a changed logical block number entry already in the buffer; and storing the changed logical block number in the buffer further ~~comprises~~ ~~comprising~~ changing the changed logical block number entry from the changed logical block number to another logical block number, data in the block before the change stored in a location referenced by the other logical block number.

51. (Currently Amended) The method of claim 47 [[4]], wherein storing the changed logical block number in the buffer further comprises storing the changed logical block number in the buffer without storing the change data.

52. (Previously Presented) The method of claim 29, wherein:
receiving the change data further comprises receiving the change data from a host; and
reading the block of data from the mirror further comprises reading the block of data from a full mirror of a storage volume on the host.

53. (CANCELLED)

54. (New) The method of claim 50 [[4]], wherein receiving the change data from the source further comprises receiving the change data from a local mirror, the local mirror including a mirror of a storage volume of a host.

55. (New) The method of claim 50 [[4]], wherein receiving the change data from the source further comprises receiving the change data from a host, the change data corresponding to a data change on a storage volume of the host.

56. (New) The method of claim 50 [[4]], wherein storing the changed logical block number in the buffer further comprises storing the changed logical block number in the buffer without storing the change data.